FX81/FX81T

1G/10G/25G PON Optical Power Meters

FX81T-25G

FX81 5WL

Optical power meter for installation, service activation and troubleshooting of B/GPON, XG(S)-PON, 25G PON, EPON and 10G-EPON fiber networks. Pass-through design to measure multiple downstream and upstream signals simultaneously for ONU/ONT verification or non-pass through/terminated OLT verification.

Key Features

- Compatible with both GPON and EPON fiber networks
  - GPON, XG(S)-PON, and 25G PON test applications
  - EPON and 10G-EPON test applications
- 4 models available:
  - 2 λ non-pass-through/terminated DS: 1490/1577nm (FX81T)
  - 3 λ non-pass-through/terminated DS: 1358/1490/1577nm
  - 4 λ pass-through DS: 1490/1577nm, US: 1310/1270nm
  - 5 λ pass-through DS: 1490/1550/1577nm, US: 1310/1270nm
- Concurrent measurements display
- Fixed SC/APC Interface for ONU and OLT test ports
- Programmable thresholds with Pass/Fail indication
- Optional broadband power meter with universal adapters
  - WaveID support when paired with compatible VeEX source
- Non-volatile storage for 1920 OPM
- Flexible data transfer, test result management and report generation options using:
  - Patent-pending NoApp™ QR code transfer
  - LT-Sync PC software (microUSB or optional Bluetooth)
  - Fiberizer™ for Android, Windows, and cloud
- High contrast LCD - visible outdoors, programmable backlight for indoor or low light conditions
- Battery: Built-in, rechargeable Li-polymer
- Battery operating time (with backlight):
  - FTTx PON mode: >25 hours

Key Specifications

- Wavelength-selective level measurements:
  - GPON per ITU-T G.984.2
  - XG(S)-PON per ITU-T G.9807.1
  - 25G PON per 25GS-PON MSA Group Specification
  - EPON & 10G-EPON per IEEE 802.3av
  - RF video (RVO)
- Calibrated wavelengths
  - GPON and EPON: 1310/1490 nm
  - XG(S)-PON and 10G-EPON and 1270/1577 nm
  - 25G PON: 1358 nm
  - RF video (RVO): 1542 to 1560 nm
- xPON Power Measurement range:
  - Burst mode at 1270 and 1310 nm: -35 to +10 dBm
  - CW mode at 1358, 1490 and 1577 nm: -45 to +12 dBm
  - RF video (RVO) at 1550 nm: -40 to +25 dBm
  - Pass-through Insertion Loss: ≤1.5 dB
- Optical Return Loss @ 1550 nm: ≥55 dB
- Display resolution: 0.1 dB
- Optional Broadband Optical Power Meter (BB-OPM)
  - Calibrated wavelengths (nm): 850/1300/1310/1490/1550/1625/1650
  - CW measurement range (dBm): -50 to +25

Test Result Saving and Transfer

In addition to USB and Bluetooth connectivity, a unique QR code method is used to save and transfer measurement results from the FX81 power meter. Simply scan the QR code and process the test data directly on your mobile device. The NoApp™ feature eliminates the need to download specialized Android or iOS Apps to your mobile device – the QR code embeds all the necessary reporting, commenting, sharing, and uploading.*

| PON OPM Measurement | PON Results in QR code | Scan QR code with Mobile Device | Process/Upload PON OPM Results |

R-Server Workforce/Productivity System and Fiberizer™ Family

A centralized server application designed for medium-to-large service providers facing the enormous challenge of managing and coordinating hundreds or even thousands of installations per day. The VeSion R-Server collects field test results for billing/record keeping purposes and simplifies inventory management. Used in conjunction with the Fiberizer™ software family, this back-office application reduces customer call-backs and associated truck rolls, maximizing workforce efficiency and lowering operational costs.

Fiberizer Mobile

Fiberizer Cloud Repository

R-Server Workforce Management

FX81 OPM

PON OPM

CW OPM

Test Results

Fiberizer LT-Sync
Fiberizer Desktop Plus

Patent pending

Optical Specifications[1]

xPON Power Meter	FX81 4WL	FX81 5WL	FX81T	FX81T-25G
Calibrated wavelengths (nm)	1270/1310/1490/1577	1270/1310/1490/1550/1577	1490/1577	1358/1490/1577
Continuous data measurement range (dBm) - OLT				
- 1358 nm	n/a		n/a	-45 to +13
- 1490 nm	-40 to +12		-45 to +13	-45 to +13
- 1577 nm	-40 to +12		-45 to +13	-45 to +13
Burst data measurement range (dBm) - ONT/ONU				
- 1270 nm	-35 to +10		n/a	
- 1310 nm	-35 to +10		n/a	
RF Video data measurement range (dBm)				
- 1550	n/a	-40 to +25	n/a	n/a
Spectral Passband (nm)[2]				
- 1270	1260 to 1280	1260 to 1280	n/a	n/a
- 1310	1300 to 1320	1300 to 1320	n/a	n/a
- 1358	n/a	n/a	n/a	1343 to 1360
- 1490	1480 to 1500	1480 to 1500	1480 to 1500	1470 to 1500
- 1550	n/a	1540 to 1560	n/a	n/a
- 1577	1572 to 1582	1572 to 1582	1572 to 1582	1572 to 1582
Power measurement accuracy, (dB)[3,4,5]	±0.5			
Pass-Through Insertion Loss, (dB)[4]	≤1.5		n/a	
Linearity, (dB)	±0.1			
Display Resolution (dB)	0.1			
Results	dBm with Pass/Fail Threshold indicator			
Interface (with dust cap protection)	Fixed SC/APC, >55dB reflectance			

Broadband Optical Power Meter (Optional for FX81T and FX81 4WL)	
Wavelength Range	800 to 1700
Calibrated wavelengths (nm)	850/1300/1310/1490/1550/1625/1650
	Optional - CWDM ITU-T 694.2 Grid
Detector type	InGaAs
Measurement range	-50 to +25
Power Accuracy, % (dB)	±5 (±0.22)
Linearity, % (dB)	±2.5 (±0.11)
Readout Resolution (dB)	±0.01
Tone Detection (Hz)	270/330/1000/2000
Wave ID (Auto λ detection)	Compatible with VeEX Light Source
Optical Adapters (interchangeable)	SC, LC, FC, ST, Universal 2.5 or Universal 1.25 ferrule

Notes:
1. At room temperature
2. FWHM (typical)
3. Calibration conditions, -10 dBm
4. Typical value
5. Calibrated wavelengths

General Specifications

Size:	164.39 x 100 x 46.93 mm (H x W x D)	Connectivity:	Data transfer via NoApp™ QR code, micro-USB or Bluetooth (optional)
Weight:	420 g (0.93 lbs.)		
Construction:	Polycarbonate chassis, rubber holster, 1 meter drop tested	Display:	High contrast LCD (128 x 64 pixels)
		Operating Temp:	-10 °C to +50 °C
Battery:	Rechargeable Li-Polymer, PON >25 h	Storage Temp:	-20 °C to +70 °C
Power Supply:	Micro USB interface, 5 VDC charger	Humidity:	0% to 95%, non-condensing